

functions as instruction, school administration, counseling, and associated educational data processing.

Man-Machine Interaction: Aimed at investigating the nature of human decision-making in a man-machine environment, developing computer-based aids for the decision process, and exploring how tasks should be allocated between human and machine.

Mathematics and Operations Research: Concerned with developing mathematical and digital simulation techniques to aid in system analysis and design, and of prime concern, techniques for computer simulation and modeling.

Staff

Of the corporation's approximately 3,000 employees, more than 1,700 are members of the professional staff. Of these more than 20 percent have graduate degrees.

Support Resources

SDC has one of the most comprehensive arrays of computers in the country, with seven major digital computer systems and two smaller systems located at its Santa Monica headquarters; additional computer facilities are used at field locations. The computer-centered Research and Technology Laboratory incorporates the most recent technological advances.

Contracting Procedures

SDC is able to respond to the normal procurement and contracting procedures of its customers. When circumstances merit, the corporation negotiates sole source agreements; in other selected cases, it competes for assignments. Standard business practices and methods of accounting consistent with Armed Services Procurement Regulations are followed in the conduct of the corporation's activities. Fees earned from contract activities are used principally to support the corporation's advanced research and development program.

Corporate Locations

SDC corporate headquarters are located at 2500 Colorado Avenue, Santa Monica, California. Offices are also maintained in other parts of the country and field sites in many parts of the world to meet the specific needs of its customers wherever they may arise.

Corporate Offices:

2500 Colorado Avenue
Santa Monica, California 90406

Advanced Systems Division:

2500 Colorado Avenue
Santa Monica, California 90406

5720 Columbia Pike
Falls Church, Virginia 22041

26 West Nottingham Road
Dayton, Ohio 45405

State Highway 4 at Forest Avenue
Paramus, New Jersey 07652

113 West Liberty Street
Rome, New York

Defense Systems Division:

2500 Colorado Avenue
Santa Monica, California 90406

2315 East Pikes Peak Avenue
Colorado Springs, Colorado 80909

45 Hartwell Avenue
Lexington, Massachusetts 02173

Research and Technology Division:

2500 Colorado Avenue
Santa Monica, California 90406

Washington Corporate Office:

1725 Eye Street, N.W., Suite 702
Washington, D. C. 20006

System Development Corporation

System Development Corporation, an independent not-for-profit organization, applies its special capabilities in information technology and the system sciences to assist organizations in the implementation of projects that serve the public interest. These capabilities include the use of such techniques as system analysis, simulation and computer programming; the design and development of information management systems; and the design and conduct of training programs.



User Orientation

SDC's system analysis and design methodology is based on the belief that a close working association with the organization that will be using the system is a necessity; that the most effective systems are not designed *for* the user, but rather, are designed *with* the user.

Research and Technology Program

Basic to SDC's corporate philosophy is its commitment to a research and technology development program designed to develop the tools that SDC's professional staff can apply to customer needs as well as to advance general knowledge of the information sciences.

The present research and technology program at SDC includes multiple studies in each of the following areas:

Executive Systems: Includes an extensive research and development program on time-sharing (simultaneous use of a single computer by multiple users) with emphasis on making it possible for the user to operate on-line in direct two-way interaction with the computer.

Data Base Management: Directed at the goal of making it possible for the nonprogrammer to work directly with his own data in a computer-based information system.

Natural Language Processing: Aimed at developing methods to enable computers to deal effectively with English text and to assist in the processing of large document collections and libraries.

Computer Programming Languages: Concerned with improving languages, compilers and tools for the professional computer programmer, as well as developing easy-to-use languages for the nonprogrammer.

Education and Training: Concerned with the research and development of improved procedures, materials, and computer programs to assist in such educational

Depending on a particular client's needs, SDC's services may include some or all of the following procedures:

System Analysis — Assist an organization in examining its operations, or a part of its operations, to determine how they can be improved.

Simulation — Design a model of a system or organization for the purpose of making a laboratory-like study of its operations.

System Design — If improvement requires automation (computers, displays, etc.) specify and design a system that provides it. An integral part of this design function includes the development of subsystems dealing with personnel interaction and the orderly flow of information through the organization.

Software Production — Produce the parts of the system, such as computer programs, operator procedures, training courses and materials.

Installation, Training and Evaluation — Install and test the software system, train personnel and evaluate operations for the purpose of providing improvements.

SDC's clients include the Department of Defense, the Air Force, the Army, the Navy and more than 40 agencies of federal, state and local governments. Representative of the projects undertaken for these customers are the following:

Command and Control

- Design, development and implementation of system programming and other system operational elements for major U.S. Air Force command and control systems, including:
 - The Semi-Automatic Ground Environment (SAGE) Air Defense System
 - The Strategic Air Command Communications and Control System (SACCCS)
 - The North American Air Defense Command Combat Operations Center
 - The Back-Up Interceptor Control (BUIC) Air Defense System
- System training and exercising of information processing systems such as the SAGE and BUIC Air Defense Systems, and regional and state civil defense systems.

Space

- Design and development of space detection and tracking systems such as USAF's Space Defense Center.
- Integration of satellite control programs for the Air Force Space Systems Division and development tasks in support of United States military satellite flights.
- Analysis of computer operations and management for the Data Systems Division of the Goddard Space Flight Center.
- Development of the operational program system of the support computers for NASA's Orbiting Astronomical Observatory.
- Development of computer programs to simulate the operation of a recoverable orbital launch system, for the Air Force Missile Development Center, to aid the evaluation of alternative vehicle configurations and flight modes.
- Development of computer program specifications, computer programs and their implementation, standards and conventions, and software documentation in support of the Navy Space Surveillance System (SPASUR).
- Analysis for the Air Force Space Systems Division of spaceborne software systems with particular emphasis on programming philosophy and application of new techniques; computational and processing difficulties; problems associated with software system specification, design, production and documentation; and mission implications of software.

Urban and Regional Development

- Development of criteria for the design and implementation of urban and regional information systems for the Department of Housing and Urban Development.
- Development of computer-based identification and intelligence systems for agencies concerned with administration of justice in New York State and for the Los Angeles Police Department.
- Technical adviser to the State of California in the evaluation of contracts to aerospace companies to apply advanced science and technology in the

areas of crime and delinquency, transportation, waste management and information systems.

- Technical assistance to the City of Los Angeles in developing a centralized information system and mathematical models to aid city planning and operations.
- Analysis of the administrative, personnel and operational activities of the New York City Police Department to recommend improved procedures.
- Development of a computer-based information system for the San Francisco Bay Area Transportation Study Commission.
- Development of a computer-based information system for the California Youth and Adult Corrections Agency to assist in case work decision-making.

Education and Training

- Development of information management systems for the school districts of Rockland County, New York, and the Province of Quebec, and an automated system for handling vocational education information for the State of Kentucky.
- Design and implementation of information processing programs to support higher education, including projects for the American Council on Education, the University of New Mexico, Amherst College, and the Claremont Colleges in California.
- Management of a seminar on educational innovations for the U.S. Office of Education.
- Development of a computer time-sharing system for teaching statistics to college students for the National Science Foundation.
- Development of procedures for adapting instructional materials and teaching techniques to culturally disadvantaged children for the Fund for the Advancement of Education.

Documentation Sciences

- Analysis of the entire system of handling scientific and technical information in the United States and development of alternative national information systems for the Committee on Scientific and Technical Information of the Federal Council for Science and Technology.
- Technical support to the American Documentation Institute in the preparation of a series of annual

reviews of developments in information science and technology. These are published in book form under a grant from the National Science Foundation.

- Design of an information management system to handle data on pending cases, statutes, pertinent court decisions and related legal issues for the Civil Division of the U.S. Department of Justice.
- Development of an information processing and retrieval system for Job Corps headquarters.

Economic Analysis and Development

- Design of a management information system for manpower projects for the Office of Economic Opportunity.
- Development of a recommended organization and general operating principles for the Appalachian Regional Commission under contract to the Area Redevelopment Administration of the Department of Commerce.
- Research on the impact of electronic data processing, development of an educational program, and long-range planning for the accounting profession for the American Institute of Certified Public Accountants.

Health

- Technical assistance to the New Jersey Hospital Association in the development of a cooperative system for automation in member hospitals.
- Computer simulation of hospital operations and design of a medical support research center for the Veterans Administration.
- Technical assistance in the analysis and design of an information processing capability in the Puerto Rico Department of Health.
- System analysis of health services for the New York City Health Research Council.
- Technical assistance to the Hackensack Hospital Association (New Jersey) in the analysis of patient data collection techniques and in the analysis and design of information processing capabilities for several areas of hospital operations.
- Technical assistance to the New York City Department of Welfare in the development of an information processing system in the area of health services administration.



SYSTEM DEVELOPMENT CORPORATION

ADVANCED SYSTEMS DIVISION: 2500 Colorado Avenue
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